

WHAT IS CLAIMED IS:

1. Method for the continuous production of acetylene diurea by reacting glyoxal with urea in the presence of mineral acids, comprising

carrying out the reaction in at least one reactor having a mixing device, into which glyoxal, urea, and mineral acid are continuously fed; and

from said reactor discharging a suspension of acetylene diurea in mother liquor;

mechanically removing the acetylene diurea from the mother liquor; and

the remaining mother liquor is recycled back into the reactor, in whole or in part.

2. Method according to Claim 1, further comprising discharging water in the form of steam from the at least one reactor.

3. Method according to Claim 1,
wherein stirrer vats are used as the reactors.

4. Method according to Claim 3,
wherein a reactor cascade of at least two stirrer vats is used.

5. Method according to Claim 1,
wherein the reaction is carried out at a temperature in the range of 50°C to 90°C and at a pressure in the range of 0.05 to 1 bar.

6. Method according to Claim 1,
wherein a total residence time in the reactors is 1 to 24 hours.

7. Method according to Claim 1,
wherein an excess of urea as compared with glyoxal is present in the reactor.

8. Method according to Claim 1, comprising
using a filtration unit for mechanical removal of the acetylene diurea from the mother liquor.

9. Method according to Claim 8,
wherein an obtained filter cake is neutralized, on the filtration unit, by means of treatment with neutralized mother liquor.

10. Method according to Claim 1, further comprising
drying the removed acetylene diurea in a spin-flash dryer.